JOURNAL
OF THE
Tennessee Academy of Science

VOL. XXXVIII JULY, 1963 No. 3

COLLEMBOLA OF THE GREAT SMOKY MOUNTAINS

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During the years between 1952 and 1958, over two hundred samples of decaying leaves, wood, soil, et cetera, were collected in the Great Smoky Mountains National Park, Tennessee-North Carolina. These were processed through the Berlese apparatus and the insects isolated. Samples from representative habitats were selected and the Collembola classified. Most of the determinations were made by the senior author. Dr. Federico, Bonet, Escuela Nacional de Ciencias Biologicas, Mexico, D. F., determined the Neelidae.

Swain County is in North Carolina; Sevier and Blount Counties are in Tennessee. At Indian Gap, it was impossible to determine the exact boundary separating the two states, and these have been placed arbitrarily with the North Carolina forms.

Unless stated otherwise, the samples were taken from alongside the highway between the park entrance at Gatlinburg, Tennessee to Newfound Gap, and thence along the North Carolina side of the mountain to Clingman's Dome.

ORDER COLLEMBOLA LUBBOCK
FAMILY PODURIDAE LUBBOCK

Hypogastrura armata Nicolet. SEVIER CO., hemlock and deciduous litter, 4,000 ft. SWAIN CO., Rhododendron and spruce duff, Morton Overlook, 5,800 ft.

Hypogastrura manubrialis Tullberg. SEVIER CO., molding spruce needles, 4,000 ft.

Hypogastrura matura Folsom. SWAIN CO., beech litter, Indian Gap, 5,400 ft.

Mitchellania hermosa Wray. SWAIN CO., beech leaves, Indian Gap, 5,400 ft.; Rhododendron and spruce litter, Morton Overlook, 5,800 ft.

Xenylla welchi Folsom. SEVIER CO., in soil under moss and ferns, 4,000 ft.

Willemia intermedia Mills. SEVIER CO., hemlock and deciduous litter, 4,000 ft.

Willemia similis Mills. SEVIER CO., in soil under ferns and moss, 4,000 ft.

Friesea pentacantha Mills. SWAIN CO., beech litter, Indian Gap, 5,400 ft.

Odontella cornifer Mills. SEVIER CO., among spruce leaves and in soil under moss and ferns, both from 4,000 ft. SWAIN CO., beech leaves, Indian Gap, 5,400 ft.; Rhododendron and spruce litter, Morton Overlook, 5,800 ft.

Pseudachorutes aureofasciatus Harvey. SEVIER CO., mixed hardwood and spruce litter, in spruce duff, and in soil under moss and ferns, all from 4,000 ft.; in beech leaves, 4,300 ft. SWAIN CO., beech leaves, Indian Gap, 5,400 ft.; Rhododendron and spruce litter, Morton Overlook, 5,800 ft.

Pseudachorutes sexatilis Macnamara. SEVIER CO., hemlock and deciduous litter, among spruce needles, in soil underneath moss and ferns, all from 4,000 ft. SWAIN CO., hemlock and deciduous litter, Indian Gap, 5,400 ft.

Morulina callowayia Wray. SEVIER CO., deciduous and hemlock litter among spruce needles, and in soil from beneath ferns and moss, all from 4,000 ft. SWAIN CO., beech detritus, Indian Gap, 5,400 ft.

Neanura muscorum Templeton. SWAIN CO., beech leaves, Indian Gap, 5,400 ft.; Rhododendron and spruce litter, Morton Overlook, 5,800 ft.

FAMILY ONYCHIURIDAE BOERNER

Onychiurus ramosus Folsom. SEVIER CO., in several samples of hemlock, spruce, and deciduous litter, in soil under moss

and ferns, all from 4,000 ft.; in beech leaves, 4,300 ft. SWAIN CO., beech leaves, Indian Gap, 5,400 ft.; Rhododendron and spruce litter, Morton Overlook, 5,800 ft.

Onychiurus subtenuis Folsom. SEVIER CO., hemlock and mixed hardwood leaves, among spruce needles, in soil beneath moss and ferns, all from 4,000 ft.; beech detritus, 4,300 ft.

Tullbergia clavata Mills. SEVIER CO., spruce needles, 4,000 ft.

Tullbergia iowensis Mills. SEVIER CO., hemlock and deciduous litter, 4,000 ft.

FAMILY ONCOPODURIDAE DENIS

Harlomillsia oculata (Mills). SEVIER CO., hemlock and deciduous litter, in soil beneath moss and ferns, 4,000 ft.; in beech leaves, 4,300 ft.

FAMILY ISOTOMIDAE BOERNER

Folsomia elongata (MacGillivray). BLOUNT CO., among deciduous and pine leaves, Cades Cove, 1,600 ft.

Folsomia fimetaria Linnaeus. SEVIER CO., in several samples of hemlock, spruce, and deciduous duff, 4,000 ft. SWAIN CO., Rhododendron and spruce litter, Morton Overlook, 5,800 ft.

Folsomia highlandia Wray. SEVIER CO., among molding spruce needles, in soil under moss and ferns, both from 4,000 ft.

Folsomina onychiurina Denis. SEVIER CO., beech leaves, 4,300 ft.

Proisotoma americana Mills. SEVIER CO., hemlock and deciduous leaves, 4,000 ft.

Spinisotoma dispersa Wray. BLOUNT CO., in deciduous litter, old road to Cades Cove.

Isotoma andrei Mills. SWAIN CO., Rhododendron and spruce detritus, Morton Overlook, 5,800 ft.

Isotoma cinerea Nicolet. SEVIER CO., hemlock and deciduous litter, 4,000 ft.

Isotoma eunotabilis Folsom. SEVIER CO., spruce, hemlock and deciduous leaves, in soil under moss and ferns, both from 4,000 ft.; beech leaves 4,300 ft. SWAIN CO., Rhododendron and spruce leaves, Morton Overlook, 5,800 ft.

Isotoma minor Schaeffer. SEVIER CO., hemlock and deciduous leaves, spruce needles, in soil beneath moss and ferns, all from 4,000 ft. SWAIN CO., beech litter near Indian Gap, 5,400 ft., Rhododendron and spruce, Morton Overlook, 5,800 ft.

Isotoma nigrifrons Folsom. SEVIER CO., in soil under moss and ferns, 4,000 ft.; beech litter, 4,300 ft.

Isotoma olivacea Tullberg. SEVIER CO., hemlock and deciduous litter, spruce leaves, in soil under moss and ferns, all from 4,000 ft.

Isotoma trispinata MacGillivray. SEVIER CO., deciduous, hemlock, and spruce leaves, 4,000 ft.; beech leaves, 4,300 ft. SWAIN CO., beech duff, Indian Gap, 5,400 ft.

FAMILY NEELIDAE FOLSOM

Neelus minutus Folsom. SEVIER CO., in several samples of spruce leaves, 4,000-5,000 ft.; in soil under moss and ferns, 4,300 ft. BLOUNT CO., in mixed hardwood and pine leaves, Cades Cove, among pine needles, old road to Cades Cove, 1,600 to 2,000 ft.

Megalothorax incertus Boerner. SEVIER CO., hemlock and deciduous litter, also in soil beneath moss and ferns, both from 4,000 ft. SWAIN CO., in beech leaves near Indian Gap, 5,400 ft.; Rhododendron and spruce leaves, Morton Overlook, 5,800 ft.

Megalothorax minimus Willem. BLOUNT CO., in several samples from deciduous and pine needles along old road to Cades Cove from Townsend, Tennessee, also in Cades Cove. SEVIER CO., spruce and fir leaves, 5,200 ft.; beech leaves, 4,300 ft.

FAMILY ENTOMOBRYIDAE BOERNER

Lepidocyrtus curvicollis Bourlet. BLOUNT CO., in several samples of deciduous and pine leaves collected along the old road to Cades Cove, 1,200 ft.

Lepidocyrtus cyaneus Tullberg. SEVIER CO., hemlock and deciduous litter, 4,000 ft.

Lepidocyrtus cyaneus var. *cinereus* Folsom. SEVIER CO., several samples of hemlock, spruce, and deciduous material, in soil under moss and ferns, all from 4,000 ft.; beech leaves, 4,300 ft. SWAIN CO., beech leaves, Indian Gap, 5,400 ft.; Rhododendron and spruce litter, Morton Overlook, 5,800 ft.

Pseudosinella alba (Packard). BLOUNT CO., deciduous leaves, old road to Cades Cove, 1,500 ft. SEVIER CO., in numerous samples of moss and fern detritus, deciduous and evergreen leaves, 2,000 to 4,300 ft.

Pseudosinella candida Folsom. BLOUNT CO., deciduous litter, old road to Cades Cove, also under stones partially submerged in creek, 1,200 ft.

Pseudosinella sexoculata Schött. SWAIN CO., beech litter, Indian Gap, 5,400 ft.

Orchesella ainsliei Folsom. BLOUNT CO., deciduous and pine leaves, old road to Cades Cove, 1,500 ft.; deciduous and pine material in Cades Cove, 1,600 ft. SEVIER CO., spruce leaves and rotten wood, 4,000 ft. SWAIN CO., Rhododendron and spruce litter, Morton Overlook, 5,800 ft.

Tomocerus flavescens var. *americanus* Schött. SWAIN CO., beech leaves, 5,200 ft.

Tomocerus flavescens var. *separatus* Folsom. BLOUNT CO., under rocks partially submerged in Forge Creek, and among leaves of deciduous and evergreen trees, Cades Cove. SEVIER CO., deciduous and spruce litter, 4,000 ft. SWAIN CO., beech leaves, 5,200 and 5,400 ft.

Tomocerus lamelliferus Mills. BLOUNT CO., among deciduous leaves on stream bank, 1,200 ft.; among very dry litter, 1,500 ft., old road to Cades Cove. SEVIER CO., several samples of hemlock, spruce, and deciduous leaves, also in soil under moss and ferns, all from 4,000 ft.; in beech litter, 4,300 ft. SWAIN CO., among molding spruce and fir needles, in rotting wood, and in beech duff, 5,200 ft.

FAMILY SMINTHURIDAE LUBBOCK

Sminthurides occulatus Mills. SEVIER CO., in soil beneath moss and ferns, 4,000 ft. SWAIN CO., beech litter, Indian Gap, 5,400 ft.

Sminthurides pumilis Krausb. SEVIER CO., hemlock and deciduous litter, 4,000 ft.

Arrhopalites binoculatus Boerner. SEVIER CO., among beech leaves, 4,300 ft.

Arrhopalites binoculatus var. *grisea* Axelson. SEVIER CO., among beech leaves, 4,300 ft.

Arrhopalites caecus Tullberg. SEVIER CO., hemlock and deciduous litter, 4,000 ft.

Sminthurinus aureus Lubbock. SEVIER CO., among spruce leaves, and in soil beneath moss and ferns, 4,000 ft. SWAIN CO., evergreen litter, Morton Overlook, 5,800 ft.

Sminthurinus elegans Fitch. SEVIER CO., hemlock and deciduous litter, also in soil beneath moss and ferns, 4,000 ft.

Neosminthurus clavatus Banks. SEVIER CO., mixed deciduous litter, among molding spruce leaves, in soil beneath moss and ferns, 4,000 ft.; molding beech leaves, 4,300 ft.

Dicyrtoma frontalis Banks. SEVIER CO., in beech duff, 4,300 ft.

Ptenothrix marmorata Packard. SEVIER CO., in soil under moss and ferns, 4,000 ft.

In this paper 55 species and subspecies of Collembola representing 30 genera are listed. These appear to be the first records of Collembola from The Great Smoky Mountains National Park, Tennessee-North Carolina.